

# THARUNKA



01.

03/2019

The Case for an Australian  
Carbon Dividend / S.O.S  
to ASOS / The Hypocrisy  
Of Justin Trudeau's  
Environmental Politics



*Tharunka* acknowledges the traditional custodians of this land, the Gadigal and Bedigal people of the Eora nation, on which our university now stands.

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As the first editorial address of the year it seems fitting to not just reflect on what *Tharunka green* has meant to all the students that have contributed but to also reflect on the broader editorial vision and direction for *Tharunka* in 2019.

Many of you already know, but for those of you that don't, this year *Tharunka* will be a collector colour series, with each theme being resembled by a colour. Each edition will be numbered and we encourage you to not just collect the whole series but also want you to engage with us and share your thoughts on what you think of each instalment on social media using the hashtags #tharunkacolourseries and #tharunkagreen.

This year we are trying to create an engaged and active readership as at the end of the day *Tharunka* has always been about the students, for the students and by the students.

The concept behind the colour series is to celebrate the diversity of our student body and perspectives. Each themed colour is designed to highlight, champion and reflect upon different aspects of the individuals, cultures, voices, minorities and identities that colour the vibrant atmosphere of the student community.

This year *Tharunka* is doing everything it can to seek out urgent and challenging stories, to foster a culture of acceptance and inclusivity; and to publish work that inspires us, challenges us and forces us to reflect.

*Tharunka green's* roots rest in the student climate marches that signified the closing of 2018 (and the opening of 2019). These events are particularly pertinent as they demonstrate how the persistence of students banding together enabled the relaying of an urgent message.

As Greta Thunberg succinctly put it at the COP24 UN climate conference in Katowice, Poland, "our biosphere is being

sacrificed so that rich people in countries like mine can live in luxury", before adding, "we can't solve a crisis without treating it as a crisis".

Essentially, *Tharunka green* has been a space for students to recognise that climate change is a crisis.

*Tharunka green* has been a testament to students looking at a future that is increasingly precarious as scientific evidence continues to reveal climate change is happening at an unprecedented rate.

*Tharunka green* is a bid for conservation and preservation.

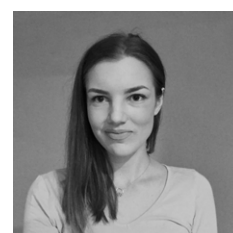
*Tharunka green* is a space for students to respond to and reflect upon the growing anxieties that stir within us when we think about an uncertain future.

As Managing Editor, *Tharunka green* has been nothing short of inspiring and compelling to be a part of. The most impressive feature of this edition has been the depth, scope and the richness of each contributor's vision.

*Tharunka green* has forced us to consider everything from the cultural and environmental significance of China's perishing rivers, to sustainable approaches to food, fashion and family planning. We have examined previously overlooked angles of the climate dialogue, addressing Trudeau's pseudo-leftism. We have explored the benefits of carbon dividends and further adventured with Amelia to Hebron Island to vicariously witness coral bleaching. *Tharunka green* goes to the end of the world and back, delivering illustrations, poetry, opinions and reviews of all things green.

We believe we have started the year with a bang but don't forget to get online and tell us what you think!

**Georgia Phillips**  
Managing Editor



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Any complaints should be made in writing to the Marketing & Publications Manager.



Levent Dilsiz

Sub-editor

No piece of television has made me scream 'YES' and click my fingers in approval more than Netflix's *The Good Place* when it (spoiler alert) reveals that the reason no human has been allowed into the show's re-conceptualised version of heaven, for 500 years, is because of the "unintended consequences" of each innocent action. It's true – the fragmentation of production processes under unregulated capitalism has resulted in almost every transaction being a product of soil contamination, air pollution, labour exploitation, land theft, water wastage, and carbon emission. It is difficult to escape from the palms of processes that perpetuate such crimes when, really, our dependency on fast and cheap production in this efficiency obsessed economy, situates us within their tight fists. At *Tharunka*, we are starting our 2019 colour series with the colour Green, tapping into a cultural moment where masses are mobilising to hold governments, companies, and ourselves accountable. It was a pleasure to work with Justine Ching who unpacks the complexities of conscientiously navigating a fashion industry built on fast and wasteful production; with Shakti Srikanth who explains the workings and potential benefits of an Australian Carbon Dividend Plan alongside an interview with Professors Rosalind Dixon and Richard Holden; and Crystal Ji, who, through Justin Trudeau, exposes the hypocrisy of many leftist politicians, who at once preach climate justice rhetoric but fail to act on their words. In this issue, minds unite from various perspectives to address our generations most urgent issue – ecological destruction.



Joshua Fayeze

Sub-editor

What a better way to start off the year than to dive straight into the most pressing issues that concern our collective being in this world today, cutting across all the minutiae of social and cultural happenings that we seem so busied with. Our interaction with the environment, the damage we've wrought on it, and the reckoning it will bring to our industrial-modern edifice – these are all topics that are quite unnerving, and seem too large for us to take account of. I won't lie to myself and say I've

# dear reader

been doing my own due diligence to at least face up to the personal responsibility. The corporate culpability in ecological disaster, the cultural conditioning which shape our consumption habits, and the sense of powerlessness you feel in the face of these things, makes it all too easy for my mind to switch into my languorous pseudo-academic flight mode of “its a structural issue, not a personal one, your own contribution won’t make the slightest difference”. Being a part of the making of this issue has kicked me out of my self-imposed idleness, as I am reminded by so many of the incredible contributors how the personal cost itself is incredibly high. I have learnt of the enormous energy expense of eating meat versus a plant-based diet, standing as glaring evidence beyond any moralizing facebook flame-wars, and the epic scale of the water crisis in China, where our only recourse for understanding is to ancient myth, myth now become cold reality.



Lydia Morgan

Sub-editor

Green might be the moment you take to sit in the grass and marvel at the life teeming between its blades; or the fern in your kitchen that makes you appreciate oxygen just a little bit more; or maybe it’s the colour suddenly paraded loudly and proudly before you by H&M; the colour of initiatives by certain universities who love solar-powered classrooms and coal industry profits in equal measure; it’s the algae blanketing the surface of the Darling River and suffocating what was once thriving beneath it.

It’s a vision of what could come and a lament for what we’ve already lost. Hope, fear, gratitude, resignation, resistance, exploitation, determination.

So what do we do when faced with this maelstrom of contradictions and tragedies and truly overwhelming emotions?

Recycle? Get a keep cup? That’s something. Fight for systemic change? That’s more.

And of course, we make art.

From Hamish Duncan’s chillingly believable vision of a not-so-distant Adelaide overcome by climate chaos, to Axel-Nathaniel Rose’s poignant rumination on bringing children into a dying world, the creative works in this issue of Tharunka remind us that the questions of our planet and its future are inextricable from the human experience and each and every one of our inner lives. The words between the pages of this issue may offer you hope, or echo your despair, but as art always does it will tell you this: we feel it too.



Sunny Lei

Graphic Designer

Green is an urgent theme. It calls us to be more environmentally-conscious of our actions and what we consume. Buy soap instead of body wash that comes in plastic, use reusable grocery bags, print on both sides of the paper, thrift, upcycle, compost! If these seemingly small gestures become a habit, collectively, it will make a difference.

The design vision for Tharunka this year is that it will embody the ethos of its themes. In this issue of Tharunka Green, we captured this through using a natural, earthy colour palette to reflect the theme of sustainability.

As you flip through the pages of recycled paper of this issue, look out for the for the tips on everyday sustainable practices. I hope it will make you think: how can I be more environmentally-conscious?

# The Rivers of China

Jack Zhou

With China's publication of its First National Census for Water in 2013, it became known that 28,000 rivers – a total basin area of almost 3 million square kilometres – appeared to have dried up and vanished.<sup>1</sup> This remains an especially worrying figure as no more than three decades ago there were roughly 50,000 of these rivers all throughout China.

Year by year, this problem demands greater attention, and by 2019, the number of rivers is likely to have diminished even further. The Chinese government blames their dwindling water supply on the accelerating rate of climate change. However, experts and ecologists believe it has just as much to do with the rapid industrial development of the country, poor government management and unsustainable groundwater extraction.

Water scarcity poses a critical problem for China. According to the United Nations, China is among the top 13 countries most affected by it.<sup>2</sup> The Yellow River is shrinking in size and the Yangtze may run out of water because of the great numbers of damming and reservoir projects that's volume overtakes the natural flow of the rivers and thereby exhausts them.

This has already happened to a host of rivers in China's north such as the Yongding. Some of the dryer northern parts, such as Beijing, had previously relied on reservoirs rather than a steady stream of water meaning droughts in the region are not uncommon.

However, one of the greatest challenges posed is that the Chinese government's solution seems somewhat untenable. In 2018, the South-North Water Transfer Project began operating after decades of development and amassed billions of dollars in total costs. This was an ambitious project to channel water from the Yangtze in southern China towards the north. It is the largest dam canal system of its kind, however, China's rivers will further buckle under the weight of such a colossal, water-intensive project. The canals only

2. Turn off the lights when you're leaving the room



## “So is there a solution to this imminent crisis – a solution as monumental as Yu the Great’s?”

divert the water but the total volume of the river itself is running dry.

This is certainly not the first time China has faced problems with its rivers. On a grander scale, China’s relationship with its Great Rivers – the Yangtze and the Yellow River – is essential to their historical and national identity.

The story goes that over 3,000 years ago, China was at the mercy of the Great Floods. Each year, the river flooded so intensely that the early kingdom was almost wiped out. The common people suffered as their towns were destroyed, and famines became rife. Attempts to dam up the flood had failed. Then, a nobleman called Yu the Great, devised a solution. He began the arduous task of channelling the rivers and building thousands of canals, diverting the floodwater to the surrounding fields and towards the sea.

Though a nobleman by birth, he laboured with the common people for years, until the floods were at last controlled. The taming of the Great Flood is China’s central myth, just as the Flood in Genesis is key to the West. China, in many ways, owes its power and prosperity to this initially fraught relationship with the natural world.

So why look to ancient history? Even with a gap of over three thousand years, China faces the same primordial challenge, though now, it is the effects of climate change that threaten to deplete its rivers entirely and could ultimately destroy the nation itself. But the story also speaks to the ingenuity and enterprise of the Chinese: their tenacity and refusal to shirk from any challenge.

Naturally, China relies on its rivers to this day. But as more and more rivers dry up, and as groundwater becomes scarcer, they are now beginning to feel the effects of a severe water crisis.

Dams are left bereft of water and plateaus are found completely empty. Residents have found thousands of dead animals awash in the Huang Pu River.<sup>3</sup> Images like these show the other side of China’s modern

industrial success story. Former Chinese premier Wen Jiabao has even stated that this water crisis will threaten the survival of China itself.

The audacity and enterprise of China may prove to be its own undoing. The enormous success story of their past few decades will quickly face diminishing returns as its environmental depletion accelerates. Their focus on maximised and constant economic growth could end in catastrophe.

So is there a solution to this imminent crisis – a solution as monumental as Yu the Great’s? Although the story is more myth than fact, Yu is revered by the Chinese for all the qualities which are needed to face a problem of this dimension: ingenuity, vigour and self-sacrifice. It may seem to us that China already has much of the first two. But of the third, we must ask whether they are willing to sacrifice the yearly economic growth they crave for their own future survival. The choice may seem obvious to us, but the Chinese government has done little in terms of preservation and sustainability.

China remains the oldest continuous civilisation in existence; there is a deep historical bond spanning almost 4,000 years. Because of that, it has survived nearly every kind of disaster known to fall upon human civilisation – war, famine, earthquakes, floods, just to name a few. But climate change and ecological destruction present a multifaceted predicament which defies a simple or comprehensive solution.

It would take the cooperation and concerted efforts of international and domestic agents; government, NGO and corporate actors; scientists, engineers, conservationists and local communities. It would take a greater level of transparency on the part of the Chinese government and a serious re-examination of their development plans surrounding their rivers. This time, survival is still unwritten in history.

<sup>1</sup> Angel Hsu and William Miao, “28,000 Rivers Disappeared in China: What Happened?” The Atlantic, accessed 10 February 2019, <https://www.theatlantic.com/china/archive/2013/04/28-000-rivers-disappeared-in-china-what-happened/275365/>.

<sup>2</sup> “Why Are Half of China’s Rivers Disappearing?” Vision Times, accessed 10 February 2019, <http://www.visiontimes.com/2017/04/03/why-are-half-of-the-rivers-disappearing-in-china.html>

<sup>3</sup> Nicola Davison, “Rivers of blood: the dead pigs rotting in China’s water supply,” The Guardian, accessed 15 February 2019, <https://www.theguardian.com/world/2013/mar/29/dead-pigs-china-water-supply>.

# S.O.S to ASOS

Justine Ching

It's 10am, slightly overcast with a brisk chill sweeping across campus. It's still summer yet autumn is impatiently knocking. You shiver, take out your phone, open your browser, type in "aso-" to which your phone responds with an auto suggestion: [www.asos.com.au](http://www.asos.com.au). You scroll past khaki puffer jackets, Steve Jobs-esque turtlenecks, and Teddy bear coats that'll be out of style before you graduate. Add to cart. Spent over \$125? Express shipping it is. You close your phone, go to your lecture, and open your laptop. More browsing for the next two hours. Maybe you can find some matching boots.

Clothing consumption is at an outrageous high with fashion being the third most polluting industry globally.<sup>1</sup> In 2017 alone, Australians were estimated to have bought an average of 27kg of textiles per person.<sup>2</sup> The business of fashion perpetuates a cycle of making, selling, and dumping, with a majority of consumers engaging in only buying and disposing. In both the creation and disposal of clothing, there is always an environmental cost.

Consider your favourite pair of Levi's. To make a pair of jeans, the denim consumes 3,781L of water<sup>3</sup>, produces 33.4kg worth of greenhouse gases<sup>4</sup>, and leaves tangible waste in the form of plastic packaging. The jeans are a global citizen, they're travelling internationally and releasing CO<sub>2</sub><sup>5</sup> before arriving domestically at your door after your friendly courier drops them off. You rip open the plastic, try them on, wear them for two seasons, before donating them to Vinnies, where an overflowing rack of identical jeans hang forlornly. The environmental costs of constructing, transporting and even disposing clothing are exorbitantly high. In such a wasteful industry, how do we disengage from this cycle of disposal? Firstly, we need to recognise the dominance of fast fashion over its rival of sustainable fashion. Then we need to begin reforming our buying behaviour.

Sustainable fashion revolves around transparency and traceability. It requires a humane and environmentally-friendly supply chain where garments are constructed from natural fibres, waste is decreased, and factory pollution is minimised. US retailer Reformation practices sustainability through purchasing carbon offsets, categorically recycling wastage, and using biodegradable fibres for a majority of their products.<sup>6</sup> To shoppers, sustainable production must sound like a perfectly logical answer to the fashion industry's pollution, yet most popular retailers do not reflect these standards.

At the opposite end of the spectrum is fast fashion. Fashion in the 21<sup>st</sup> century is a fast-moving consumer good. With the internet broadening the possibilities of the shopping experience, new retailers are entering the market offering indistinguishable goods that are cheap, current, and trendy. The garments often consist of synthetic materials such as polyester and nylon that are easily acquired and inexpensive to produce. In addition to pollution from production, when washed, clothing made of synthetic materials release micro plastic debris that eventually enter the ocean, resulting in even more damage.<sup>7</sup>

A simple search of Australian retailers such as Princess Polly or Glassons would reveal a majority of products being synthetic. Biker shorts, a festival staple found in almost every fast fashion retailer, tend to contain 85% Nylon.<sup>8</sup> "Satin", an imitation of silk and the fabric used in that midi skirt that everyone from your great aunt to your cousin owns, is 100% polyester.<sup>9</sup> As consumers, we hastily devour these trends.

I see it, I like it, I want it, I got it. Consumers demand clothing that is affordable yet high quality, stylish yet timeless, and they want it with next day delivery options.

For brands to stay competitive in the digital age, they require international shipping for a global market, a cheap supply chain, and an intuitive sense of what is current. In their effort to minimise costs, supply chains lack full transparency regarding the environmental impact of their products' production and distribution.<sup>10</sup> They proliferate "instagrammable" trends such as leopard print blouses at unimaginable speeds to incite FOMO and activate impulse purchasing behaviour.

The market is over-saturated by identical items marketed by suspiciously similar retailers. Popular brands such as Misguided need only one week to ideate, produce and distribute a "fashionable" concept.<sup>11</sup> And in the marketing of these trends, they will utilise a range of social media platforms, collaborating with influencers and generating sponsored posts, in order to incite a buying frenzy in their customers. I am sure we have all fallen prey to accidentally liking that rose-tinted post on our feed; almost impressed at how seamlessly the algorithms have integrated the advertisement into our online psyche.

However, once the trend's season has ended, this miraculous product becomes obsolete in our eyes and in those of the retailer as they slash the remaining stock at half price to make way for another trend. These brands not only fuel an unsustainable pattern of production but encourage unsustainable consumption on the consumer's behalf – they nurture a shopper's desire for instant gratification and can form foundations for needless purchasing that takes a toll on both the environmental and our wallets.

1. "Impact of Fashion", Reformation, accessed February 19, 2019, <https://www.thereformation.com/pages/impact-of-fashion>.

2. Fiona Pepper, "Australia's obsession with new clothes and 'fast fashion' textiles hurting the environment," Australian Broadcasting Corporation, January 12, 2017, <https://www.abc.net.au/news/2017-01-12/australias-obsession-with-new-clothes-hurting-the-environment/8177624>.

3. "The life cycle of a jean", Levi's, accessed March 2, 2019, <https://www.levistrauss.com/wp-content/uploads/2015/03/Full-LCA-Results-Deck-FINAL.pdf>.

4. Ibid.

5. Sarah Wiedersehn, "The true cost to the environment of your air travel," SBS News, October 12, 2018, <https://www.sbs.com.au/news/the-true-cost-to-the-environment-of-your-air-travel>.

6. "The Sustainability Report (2017)," Reformation, accessed February 19, 2019, <https://thereformation-webinc.netdna-ssl.com/media/>

7. Fiona Pepper, "Australia's obsession with new clothes and 'fast fashion' textiles hurting the environment."

8. "Bike shorts", Glassons, accessed March 3, 2019, <https://www.glassons.com/clothing/shorts/casual-short/bike-short-SW40576PLN?c=BLACK>.

9. "Silky midi skirt". Glassons, accessed March 3, 2019, <https://www.glassons.com/clothing/skirts/casual-skirts/silky-midi-skirt-SL39276SAT?c=BLACK>.

10. Sharon Thiruchelvam, "Cleaning up the fashion supply chain," Raconteur, June 22, 2018, <https://www.raconteur.net/business-innovation/cleaning-fashion-supply-chain>.

11. Mary Hanbury, "Zara is facing a massive threat that could jeopardize the business," Business Insider Australia, May 24, 2017, <https://www.businessinsider.com.au/fast-fashion-is-getting-faster-2017-5?r=US&IR=T>.

12. C. E. Henninger, O. J. Alevizou & C. J. Oates, "What is sustainable fashion?" Journal of Fashion Marketing and Management 20, no. 4 (2016).

13. J. Han, Y. Seo & E. Ko "Staging luxury experiences for understanding sustainable fashion consumption: A balance theory application", Journal of Business Research 74 (2017): 162-167.

Despite consumers becoming increasingly concerned with the imminent effects of global warming, sustainable fashion has still failed to gain mainstream traction.<sup>12</sup> There exists a cognitive dissonance between the buyers' desire for environmentally-friendly products and their actual clothing purchases.<sup>13</sup> This is likely due to numerous factors including un-affordability, inaccessibility, and a perception that sustainable fashion is not a feasible norm for the average shopper's closet. But eco-friendly fashion can be seamlessly integrated into a consumer's life.

As time-poor, coffee-craving students, buying from brands such as Everlane – that ensure sustainable suppliers – isn't always an option. But there is potential for us as consumers to shift the fashion industry to a progressively greener place:

### 1. Shop Smarter

We need to start taking sustainability seriously. Shopping smarter doesn't necessarily mean splurging \$200 a month on purchasing all of Elk's essentials range. Shopping smartly and sustainability should be about bridging the gap between our theoretical support for environmentalism and that of our purchasing behaviour.<sup>14</sup> As smarter shoppers we need to approach fashion with a future-oriented mindset – this means buying pieces for their longevity and universality as opposed to their sole aesthetics. Sustainable clothing is constructed to remain enduringly relevant both in a design and a physical sense.

In recognition of our environmental concerns, we should purchase sustainable clothing as long-term investments into our wardrobe and the Earth. Alongside this, spending less time trawling fast fashion retailers and even shopping locally can aid in reforming our habits. We don't need to feed the wasteful cycle of fast fashion – but we can change it. Any action that reduces excessive wasteful production and consumption is already forging better purchasing habits.

### 2. Buy Second-Hand

It is fortunate that thrifting has been revived as a trend in recent years. But, instead of treating the practice as a fad, integrate it into your buying habits. An inescapable fact is that a portion of the donated clothes will be made of synthetic fibres. Whilst you can spend most of your days checking the labels for natural fibre origins, buying synthetic fibres from an op-shop isn't a cardinal sin. If you're already living by step one and shopping less frequently, you are inadvertently influencing the reduction of fast fashion production. As for the treatment of your new second-hand garments, buying something that you know will be wearable for you in the long term is always a smarter option. Although washing synthetics releases microfibres into the oceans, disposing of them in landfills has an even greater environmental cost due to the release of toxic pollution and only 1% of the materials being recyclable.<sup>15</sup> Thus, in saving your new op-shop finds from even greater environmental wastage, try washing them less and altering them over time to ensure maximum usage.

### 3. Demand Brands Make Harder Commitments to Sustainability

Basic economics will teach you consumer demand drives supply. If consumers are able to urge massive retailers to employ sustainable practices, they could trigger an industry-wide transformation that mobilises towards a greener planet. The fashion industry is already predicted to trend towards sustainability as consumers, especially young adults, are more engaged in social and environmental causes than previous generations.<sup>16</sup> Now, big brands just need a push.

ASOS currently has a team of 11 sustainability experts who advise the brands suppliers on environmentally friendly production practices, and also manage ASOS' Eco-Edit, a sub-brand which sells sustainable products from notably eco-friendly suppliers.<sup>17</sup> They have also created a 2020 agenda that is dedicated to initiating a circular fashion economy that avoids disposal by rehabilitating fabrics for future releases.<sup>18</sup>

However, this is only a minor fraction of the behemoth retailer's product offerings. It is extremely difficult for large multinationals such as ASOS to adopt sustainable practices due to the rigidity of their business structure that relies on fast fashion principles.<sup>19</sup> These retailers need to remain competitive but if loyal consumers can convince industry leaders that a competitive brand can also be a sustainable one, other companies, large and small, would follow suit.

The fashion industry has many years of restructuring ahead until sustainable practices become an unquestionable standard. A potential and promising future is one with a global body performing annual audits to ensure suppliers comply with human rights and environmental standards. A universally recognisable symbol labelling all sustainably produced garments is an idyllic prospect. But for now, all we can do is take baby steps towards better purchasing behaviour for a healthier Earth.

14. K. K. Moon, C.S. Lai, E. Y. Lam & J. M. Chang, 'Popularization of sustainable fashion: barriers and solutions', *The Journal of the Textile Institute* 106, no. 9 (2015): 941.

15. Sharon Thiruchelvam, "Cleaning up the fashion supply chain."

16. I. Amed, A. Balchandani, M. Beltrami, A. Berg, S. Hedrich, & F. Rolkens, "The State of Fashion 2019: A year of awakening," McKinsey & Company, accessed March 6, 2019, <https://www.mckinsey.com/industries/retail/our-insights/the-state-of-fashion-2019-a-year-of-awakening>.

17. "Corporate Responsibility", ASOS, accessed March 2, 2019, <https://www.asosplc.com/corporate-responsibility/our-products/sustainable-sourcing-programme>.

18. Ibid.

19. C. E. Henninger et. al. p.411.

# In Our Hands

Jennifer Fu





These panels focus on landscapes and interactions with the land, ocean, and sky. The overlaying of students with wildlife conveys the natural coexistence between man and environment which can only be achieved through a sustainable and eco-friendly approach to everyday life.

# Heron Island

Amelia Caley

**At first glance, Heron Island looks far too good to be true...**

80km off the Queensland coast sits a tiny sandy coral cay clinging by sheer force of will and bird poo to the Great Barrier Reef. It is inhabited only by a resort and a research station which hosts a huge number of marine scientists from across the world each year. All in all, it's a kind of a strange place for a second year Biology kid like me to end up.

I found myself on the island as the result of a summer internship with Tracy Ainsworth's lab at UNSW, helping out with research on the physiology of coral bleaching. When the prospect of Heron Island was raised casually in a meeting, I couldn't help but ask if there was any way I could be involved.

\*

A week later, I found myself on a tiny prop plane out into Woop Woop, also known as Gladstone, Queensland. I was excited with a strong sense of imposter syndrome and unpreparedness but ready to spend three weeks on an unpopulated island with a couple of PhD students for company. Needless to say, it was a surreal experience.

Having grown up in inner city Sydney and having always been obsessed with nature, the Great Barrier Reef held a kind of mystical quality in my imagination. It had a too-good-to-be-true kind of wonderland feel which in the past few years had stirred an increasingly urgent longing to visit it

while it is still intact.

Arriving at the island and exploring it on land and ocean gave me an immediate and overwhelming desire to share this place with my friends and family. However, I also felt a sadness that these places of rich biodiversity, heritage and relatively intact ecosystems are so rarely visited by the general population.

During my stay, a Hawksbill Turtle was found on my floating backwards in the water after ingesting plastic that was most likely produced by the island. The plastic trapped gases in the turtles stomach requiring it to be rescued and urgently relocated to a rehabilitation centre.

I couldn't help but think that if we nurtured better connections and interactions with our natural world we might be more invested in protecting it. This desire to share was tempered by the sad knowledge that we are by far the main destructive influence on these environments. Even on an island such as Heron, our impacts are felt in many ways, some apparent, others less so.

\*

Whilst the last major coral bleaching event took place on Heron Island 8 years ago, the combined effects of rising sea temperatures and increased cyclone frequency is placing great stresses on the survival of reef ecosystems. As any older divers who visited this reef long ago will tell you, the corals are nothing like what they used to be.

During my time there, I was

not only absorbed by the diversity and accessibility of the wildlife, but also highly involved in the work being carried out. As a student still wildly unsure about my study path, it was incredibly affirming to get the chance to work in your dream job and realise that it is something you could spend your life doing.

The combination of field work, lab work and creative problem-solving utilised my skills as both a fine arts and science student, teaching me many practical lessons along the way. While coral research boasts some spectacular tropical islands for its field work sites, it is also a lot of challenging and satisfying work.

All our activities from baking in the sun while cleaning tanks, to being covered in airbrushed coral tissue, along with the eternal frustrations of pumps and pipes; added to late-night and fluorescent imaging – all these tasks proved to be a fast way to make friends and become obsessed with the work.

Now to the research itself. Coral reefs are often spoken of as the 'canary in the coalmine' of climate change due to their considerable vulnerability and vital importance as ecosystems and biodiversity hubs.

Bleaching refers to the loss of colour in corals brought about by specific environmental processes as well as mechanisms inside the coral. However, many of us would be unable to describe how and why this happens, and what it means. Why do bleached corals lose their colour? Are they dead? Can they recover? To understand coral bleaching, first we need to understand what corals are.

Despite their unnatural colours and immobile lifestyle, corals are in fact animals. More specifically, they are thousands of tiny animals (closely related to sea anemones), which grow in colonies on a calcium carbonate skeleton.

1. Veron, J 2008, A reef in time: the Great Barrier Reef from beginning to end, The Belknap Press of Harvard University Press, Cambridge, 26-32.
2. Hutchings P, Kingsford M & Hoegh-Guldberg O 2009, The Great Barrier Reef: biology, environment and management, CSIRO PUBLISHING, Collingwood, 89.
3. Douglas A E 2010, The symbiotic habit, Princeton University Press, Woodstock, 145.
4. A Reef in Time, 58.

Together, colonies of soft and hard corals make up coral reefs, some of the most biodiverse ecosystems in the world. Many of these corals contain symbiotic algae within their cells which give them their colour and produce up to 90% of the coral's energy via photosynthesis.<sup>1</sup>

When corals are exposed to excess light and temperatures outside their usual range, the algae increase their rates of photosynthesis and produce excess oxygen which can start to damage the coral cells.

In response, the coral cuts its losses and starts to expel the algae.<sup>2</sup> Without their symbionts, coral cells are colourless, so their skeleton can be seen underneath, leading to the white appearance typically associated with bleaching.<sup>3</sup> While bleached coral may look dead to us, they can survive without their algae for short periods of time, and even completely white coral can recover if they can take in more symbionts.<sup>4</sup> However, if they do not acquire more algae they will quickly starve to death.

So why study corals?

Evidently, they are being threatened by climate change, so shouldn't we be implementing strategies to address the big problem rather than the run-on effects? Well, yes, but since corals make up such large and diverse ecosystems, knowing more about coral bleaching can help us predict the outcomes for a huge amount of species and inform where our conservation efforts should be focused.

Despite our growing interest in corals, we know relatively little about them on an individual or microbial level, with most studies focusing on the ecological scale.

Tracy's lab has gained acclaim for answering these essential questions using new techniques, including biomedical imaging technology, to learn more about how these animals work. The projects being carried out on Heron utilised these technologies and were highly diverse in their focus questions.

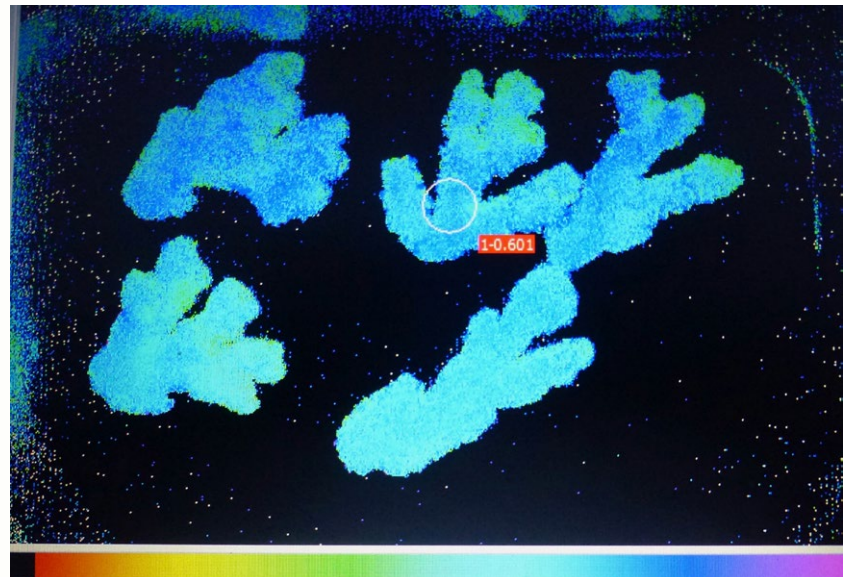
Charlotte was researching whether high flow rates improve the resilience of corals to bleaching, which could help identify parts of the reef most likely to survive major bleaching events to come.

Jesse was looking at the potential tropicalisation of corals – the phenomenon in which individual coral colonies move southwards alongside

tropical fish, as the water warms and ecosystems begin to transform.

Melissa was looking at whether the types of algae living in a coral colony differ between heat resistant and heat sensitive species, and how long it takes a bleached coral to return to a normal algae composition. Projects such as these are ultimately the base line for developing appropriate plans and policies to protect our ecosystems in the future and for the long term.

Leaving the island after three weeks, I felt a mixture of seasickness, sadness and hope. Seasickness, from a nearby cyclone system. Sadness, to be leaving this beautiful island and the hard work people have invested in its survival, despite our ongoing destructive behaviour; and hope in that the hard work pays off so that reef ecosystems in places like Heron are there for years to come.



Late night PAM fluorometry of coral measures the health of the coral by measuring how fluorescent the coral samples are.





**Top:** Charlotte and I taking flow measurements on the reef flat at Heron Island at low tide. Photo by Francesca Page. **Bottom:** Jesse and Charlotte handling *Pocillopora damicornis* samples in one of the experimental tanks at Heron Island which will be put through different bleaching trajectories over the course of the experimental period.



# Well-Oil

# The Hypocrisy Of

# Environment

<sup>1</sup> Lisa Friedman, "As US Sheds Role as Climate Change Leader, Who Will Fill the Void?" New York Times, November 12, 2017, <https://www.nytimes.com/2017/11/12/climate/bonn-climate-change.html>.

<sup>2</sup> Laura Payton, "Canada Endorses Tougher 1.5-Degree Limit to Global Warming", MacLean's, December 7, 2015, <https://www.macleans.ca/politics/ottawa/at-cop21-canada-endorses-tougher-1-5-degree-limit-to-global-warming/>.

<sup>3</sup> Lee Berthiaume, "Trudeau and Macron Promise to Double Down on Climate-Change Fight", CBC News, April 16, 2018, <https://www.cbc.ca/news/politics/trudeau-jean-paris-environment-1.4621202>.

<sup>4</sup> Justin Trudeau, "Canada's National Statement at COP21", Justin Trudeau, Prime Minister of Canada, November 30, 2015, <https://pm.gc.ca/eng/news/2015/11/30/canadas-national-statement-cop21>.

<sup>5</sup> Nicole Gaolette, "Canada's Trudeau Issues Rallying Cry for Climate Fight and Takes a Dig at the US", CNN, September 21, 2017, <https://edition.cnn.com/2017/09/21/politics/trudeau-canada-unga-remarks>.

<sup>6</sup> Oliver Millman, David Smith and Damian Carrington, "Donald Trump Confirms US will Quit Paris Climate Agreement", The Guardian, June 1, 2017, <https://www.theguardian.com/environment/2017/jun/01/donald-trump-confirms-us-will-quit-paris-climate-deal>.

<sup>7</sup> "Canada Trade at a Glance: Most Recent Values", World Integrated Trade Solution, World Bank, accessed March 1, 2019, <https://wits.worldbank.org/CountrySnapshot/en/CAN>.

<sup>8</sup> "Trudeau: 'No country would find 173 billion barrels of oil in the ground and leave them there'", CBC News, March 10, 2017, <https://www.cbc.ca/news/world/trudeau-no-country-would-find-173-billion-barrels-of-oil-in-the-ground-and-leave-them-there-1.4019321>.

<sup>9</sup> Leyland Cecco, "Kinder Morgan pipeline: Canadian government to buy project for \$4.5bn", The Guardian, May 29, 2018, <https://www.theguardian.com/world/2018/may/29/canada-kinder-morgan-pipeline-trans-mountain>.

<sup>10</sup> Ibid.

<sup>11</sup> Khelsilem, "Justin Trudeau Promised to Protect Indigenous Rights. He Lied, Again", The Guardian, June 19, 2018, <https://www.theguardian.com/world/commentisfree/2018/jun/19/salish-sea-pipeline-indigenous-salish-sea-canada-trans-mountain>.

<sup>12</sup> Ashifa Kassam, "Trans Mountain Pipeline Halted After Canadian Court Overturns Approval", The Guardian, August 30, 2018, <https://www.theguardian.com/world/2018/aug/30/trans-mountain-pipeline-latest-canada-court-overturns>.

<sup>13</sup> Cameron Jeffries, "Justice in an Unconventional World: First Nations' Treaty Rights and Procedural Climate Justice in Alberta's Oil Sands Region" in Climate Justice: Case Studies in Global and Regional Governance Challenges, ed. Randall Abate (Washington DC: Environmental Law Institute, 2016) 233.

<sup>14</sup> "Canada's Carbon Tax: A Guide to Who's Affected, Who Pays What and Who Opposes It", The Globe and Mail, November 14, 2018, <https://www.theglobeandmail.com/canada/article-canadas-carbon-tax-a-guide/>.

<sup>15</sup> "Greenhouse Gas Emissions", Government of Canada, access February

**The global environment is in crisis. Global political superpower and supposed thought leader of the democratic world, the United States, has retreated from the Paris Agreement. Instead, it is 'climate change champions' such as Justin Trudeau who will guide us through the smog to a cleaner, greener future. Or at least, that is how some have positioned him!**

The Canadian Prime Minister has been seemingly outspoken about combatting climate change, however, a closer examination of his domestic policies reveals a very different picture. Trudeau has unfailingly protected the Canadian oil industry, thereby choosing to protect economic growth above all else while undermining the very values that he purports to promote.

On the surface, Trudeau is a beacon of environmental progressivism; he has repeatedly affirmed the 1.5°C temperature limit for global warming contained in the Paris Agreement,<sup>2</sup> partnered with French President Emmanuel Macron to push for a global price on carbon,<sup>3</sup> and has proclaimed that much can be learnt from indigenous peoples about caring for the planet.<sup>4</sup>

Indeed, Trudeau has challenged other countries to address climate change using the strongest moral terms, proclaiming at a UN General Assembly address in September 2017 that, "no country on the planet can walk away from the challenge and reality of climate change... we have a responsibility to future generations".<sup>5</sup>

This resolute stance contrasts starkly with US President Trump's approach, with Trump having withdrawn from the Paris Agreement citing concerns about American sovereignty being undermined.<sup>6</sup> Contrastingly, Trudeau's apparent climate leadership has garnered him many fans around the world.

It is, however, Trudeau's curated image which belies his Janus-faced policies. He consistently protects and promotes Canada's oil and gas industry, which constitutes the largest source of exports for Canada and a significant contributor to economic growth.<sup>7</sup> In 2017, Trudeau proclaimed at an energy industry conference in Texas that "no country would find 173 billion barrels of oil in the ground and just leave them there."<sup>8</sup>

True to his word, Trudeau announced in May 2018 that the Canadian government would be buying the Trans Mountain oil pipeline and undertaking expansion works, in order to ensure the controversial pipeline would get built<sup>9</sup> and make it cheaper and more convenient to transport and supply oil from the tar sands of Alberta.<sup>10</sup> Protests by indigenous peoples about the potential environmental devastation caused by the project were largely unheard<sup>11</sup> until the Canadian Federal Court of Appeal stalled the project by ruling that the government had failed to properly consult them, and could not proceed with the project until re-consultation efforts were made.<sup>12</sup> This is highly disappointing, for a government that was elected on a platform of promising greater participation of First Nations peoples in decision-making processes on oil and gas projects.<sup>13</sup>

In the face of criticism, Trudeau has pointed to his carbon tax plan to underscore his green credentials, but the plan has received much resistance, with many provinces opting out and privileging their own policies.<sup>14</sup> Further, adopting these policies does not negate the harm caused by flourishing oil and gas projects. Oil and gas already make up about one quarter of Canada's greenhouse emissions.<sup>15</sup> As commentator Damien Gillis has estimated, the emissions from the Trans Mountain project would 'equat

# led Lies: f Justin Trudeau's ntal Politics

Crystal Ji

to adding about 3 million cars a year to the road<sup>16</sup>. More generally, Canada's expanding oil production and existing climate policies will lead to increases in emissions, rendering it more difficult for Canada to meet its pledged climate targets and potentially contributing to an increase in global temperatures by 5°C by the end of the century rather than helping to limit it to 1.5°C<sup>17</sup>. Thus, Trudeau is choosing to sustain Canada's continued reliance on oil exports instead of making greater attempts to transition the economy, with massive implications for collective efforts to combat climate change. This shows, contrary to his image abroad as a climate crusader, Trudeau lacks political courage to change the status quo.

Trudeau's government is not the only one in the developed world that essentially preaches do as I say, but not as I do. German Chancellor Angela Merkel has remarked that 'climate change will determine humanity's destiny'<sup>18</sup>, yet Germany's emissions have barely reduced in recent years, with the booming coal and automobile industries being a key part of the problem<sup>19</sup>. Similarly, Norway proudly publicises its low domestic carbon footprint, but seeks to expand its oil and gas production in the Arctic.<sup>20</sup>

Not only are these stances stunningly hypocritical, they also spotlight the unequal playing field held by Western developed countries in the fight against climate change. While we have, in the past, benefitted greatly (and continue to benefit) from emissions-intensive industries to stimulate economic growth and development, we claim moral high ground against developing countries who have not had the same opportunities. We also demand that they constrain the growth of their own emissions-intensive industries<sup>21</sup> or to shoulder equal responsibility for combatting climate change<sup>22</sup> for the good of mankind. Meanwhile, developing countries such as India and China<sup>23</sup> have in fact been some of the biggest investors in renewable energies,<sup>24</sup> with little fanfare.

It is therefore both unsurprising and understandable that some developing countries have been skeptical of Western calls for action on climate change, and reject many of the climate regimes pushed onto them by the West.<sup>25</sup> If these Western leaders truly wish to display leadership and take action against this pressing challenge they would practise what they preach. These criticisms are valid and deserving of consideration by the West. We must take figures such as

Trudeau and Merkel off the pedestals that have often been built up around them, and contest these narratives by unflinchingly scrutinising their policies. Only by placing unrelenting pressure on them and demanding accountability for the promises they have made and the words they have spoken, might we finally see true climate leadership.

According to a report published by the Intergovernmental Panel on Climate Change (IPCC) last October, the rest of the 1.5°C carbon budget agreed upon in Paris is likely to be used up within the next three to ten years.<sup>26</sup> Among other effects, it is estimated that a 1.5°C increase in temperatures will lead to the loss of 80% of coral reefs, and all coral reefs will be lost at 2°C.<sup>27</sup> In such a context, we cannot afford to continue being passive or continuously pointing the finger at others, and must push for galvanised global efforts to tackle this issue, starting with solid domestic efforts; failure to do so may just prove to be catastrophic for the future of the planet.

26, 2019, <https://www.canada.ca/en/environment-climate-change/services/environmental-indicators/greenhouse-gas-emissions.html>.

<sup>16</sup> Damien Gillis, "Justin Trudeau's Two-Faced Climate Game", *New York Times*, May 2, 2018, <https://www.nytimes.com/2018/05/02/opinion/trudeau-climate-kinder-morgan-pipeline.html>.

<sup>17</sup> Yann Robiou du Pont and Malte Meinshausen, "Warming Assessment of the Bottom-Up Paris Agreement Emissions Pledges", *Nature Communications* 9 (2018): 4814; "Canada's Oil & Gas Challenge: A Summary Analysis of Rising Oil and Gas Industry Emissions in Canada and Progress Towards Meeting Climate Targets", presented December 2018 in Katowice, Poland, <https://d36rd3gki5z3d3.cloudfront.net/wp-content/uploads/2018/12/Canadas-Oil-and-Gas-Challenge-Dec-2018.pdf?x83420>.

<sup>18</sup> Damian Carrington, "Climate Change will Determine Humanity's Destiny, Says Angela Merkel", *The Guardian*, November 15, 2017, <https://www.theguardian.com/>

[environment/2017/nov/15/climate-change-will-determine-humanitys-destiny-says-angela-merkel](https://www.theguardian.com/environment/2017/nov/15/climate-change-will-determine-humanitys-destiny-says-angela-merkel).

<sup>19</sup> Paul Hocken, "Germany is a Coal-Burning, Gas-Guzzling Climate Change Hypocrite", *Foreign Policy*, November 13, 2017, <https://foreignpolicy.com/2017/11/13/germany-is-a-coal-burning-gas-guzzling-climate-change-hypocrite/>.

<sup>20</sup> Dave Keating, "Climate Hypocrisy: Clean at Home, Dirty in the Arctic", *DW*, August 16, 2017, <https://www.dw.com/en/norways-climate-hypocrisy-clean-at-home-dirty-in-the-arctic/a-40121909>.

<sup>21</sup> See, eg, Dean Nelson, "India Attacks British and Western 'Hypocrites' Over Cutting Emissions", *The Telegraph*, August 5, 2009, <https://www.telegraph.co.uk/news/worldnews/asia/india/5977599/India-attacks-British-and-Western-hypocrites-over-cutting-emissions.html>.

<sup>22</sup> See, eg, Fiona Harvey, "Paris Climate Summit: Developing Countries Angry over Financial Plan", *The Guardian*, December 5, 2015, <https://www.theguardian.com/>

[com/environment/2015/dec/05/paris-climate-summit-developing-countries-angry-financial-commitments](https://www.theguardian.com/environment/2015/dec/05/paris-climate-summit-developing-countries-angry-financial-commitments).

<sup>23</sup> Developing country classification in accordance with status in the World Trade Organization.

<sup>24</sup> Rob Smith, "Three Countries are Leading the Renewable Energy Revolution", *World Economic Forum*, February 26, 2018, <https://www.weforum.org/agenda/2018/02/countries-behind-global-renewable-energy-growth/>.

<sup>25</sup> See, eg, Patrick Winn, "Rich Countries Need to Stop Being Hypocrites on Climate Change, Philippines President Says", *GlobalPost*, August 3, 2016, <https://www.pri.org/stories/2016-08-03/rich-countries-need-stop-being-hypocrites-climate-change-philippines-president>.

<sup>26</sup> "Special Report on Global Warming of 1.5°C", *Intergovernmental Panel on Climate Change (IPCC)*, October 8, 2018.

<sup>27</sup> *Ibid.*

# Barren

Axel-Nathaniel Rose

“What do you mean?”

Rachel was tucked into the corner of the couch, legs pulled to her chest, arms wrapped tightly around her knees.

“I mean...”

She bit her lower lip, gnawed on it.

“I mean I don’t want to make a new baby. A new person,” Rachel said at last.

She went back to biting her lip.

“Well, we can’t make an old one,” Alanna teased.

She leaned forward and brushed her thumb over Rachel’s lip slowly, her nail touching Rachel’s teeth.

“What do you mean?” Alanna asked again, gentler, quieter.

“I don’t want to set out to make a new person. I don’t want to be responsible for a new life that has to be lived.”

“But what’s the alternative?” Alanna asked.

“Adoption? Fostering?” Her voice faltered.

“If it’s about-- my genes-- the lung diseases have all been environmentally caused, and depression isn’t always genetic, mine was circumstantial –” Rachel grabbed Alanna’s hand and shook her head.

“It’s not that,” she managed to say. She kept shaking her head until the right words came out. “It’s... climate change.”

Alanna’s brow lifted and her hard breathing stopped.

“What?” She ran her fingers through her hair, tight curls bouncing back to place after each nervous stroke.

“If you don’t want babies please be honest. Don’t lie.”

Rachel flushed from her neck to her ears.

“I am not!”

Alanna was already nodding in silent apology.

Rachel stared at the wall behind Alanna’s head - four years’ worth of photos framed the clock; the setting sun pouring light through the window, tinging the room pink. Their engagement rings shimmered, silver becoming gold in the light. They had started the conversation with such light-heartedness - doubting that there were any untouched corners left between them - and they both ached for that feeling back.

Rachel’s words came in jolts and starts. “I want kids with you. So much. But I don’t want to bring a... a new baby into the world. I don’t want any more births at all, really, but I know that that’s not gonna happen. I would be happy

to... adopt, or foster, or both. But I don’t want to take part in bringing a new person into the world.”

“Because of climate change?”

Any other time, Rachel would have jumped to get her tissues and tea, but she now just looked down at their hands, staring at the way their fingers looked hooked over one another.

“The world’s ending, Alanna.” The descending sun glanced off the mirror on the other side of the room to cast them in gold.

“We’re -- we’re killing the planet, so fast that we can’t even see how bad it is yet, ‘cause nothing like this has ever happened before.”

Alanna wiped at her eyes. A heavy lump grew in Rachel’s throat.

“It’s-- every parent makes mistakes, but I never want a child to look back and ask how I could’ve made them live in a world that’s gonna be burning up by the time they’re thirty.”

She inhaled, breath quivering as she struggled to keep herself composed. Her voice got progressively higher in the quiet fight to not cry.

“I will give everything I have to any child we have, but I-- I want to make a life that exists as good as it can. I don’t want--” She couldn’t finish. Alanna nodded.

\*

“Rachel?” Alanna whispered into the dark.

“What’s wrong?”

Alanna was quiet for so long that she might’ve fallen back to sleep. But Rachel stayed still, looking at Alanna’s back.

“You wouldn’t want me to have a baby, either, would you?”

Rachel forced the words out, let them drift on her shaky breath: “No, I wouldn’t.”

It was quiet. Quieter than nights in the city usually were; no sirens, no revellers.

“Lanna?” Alanna turned over so they were nose to nose. “What do you want?”

“I wanted to have a baby,” she said. Rachel didn’t need to nod - they were so close they could read each other’s’ breath; feel their eyelashes flutter against each other; hear the tiny sounds of the sheet against skin.

\*

“You okay, brainiac?”

Alanna had assembled a towering wall of books and magazines on the dining table, on everything from parental

psyches to the effect of climate change on the production of chocolate.

Rachel rubbed Alanna's shoulders gently through her jumper and kissed the top of her head.

"I'd never thought about climate change like the world's ending. I know I must be--stupid, but I hadn't."

Rachel grumbled her protests, but Alanna cut her off.

"It's exacerbated by, um--late stage capitalism," Alanna said, trying to look stern; trying to joke. She just sounded distraught.

"Here I was thinking we were getting settled on our feet, but there's a landslide." Again, she tried to joke. Again, they fell to silence.

Rachel pulled out the seat beside her, pulling a book from the top of the pile that was about what it meant to be a parent. They locked their ankles together under the table and touched hands above it.

\*

Without looking up from her computer, Alanna asked, "When did you start feeling like...?"

"Before we got together." The clicking of keys slowed to a stop. Alanna sighed and nodded.

"I spent so many years obstinately saying how I wasn't gonna settle down and have babies. And how my period was just a useless curse."

She seemed to have been on the verge of tears for days – they shone with the screen's reflection.

"But I never really thought the world was terrible. Through everything--" She bit her tongue. She closed her eyes; water clung to her eyelashes.

"I thought it was amazing."

"It is amazing." Rachel moved a pile of books so they were face to face.

"And you don't want to show that to anyone new?"

"Of course I do!" Rachel managed to stop herself from crying, but her words ran away from her anyway.

"I want to-- I want to teach a kid how to-- tie their shoelaces. Make soup. And help them with their stupid history homework. But there are kids that are being born everyday--" She gripped the edge of the table.

"Would you-- don't you think you'd feel different?" Alanna put her hands to her face and dug the heels of her palms in against her temples.

"I don't know. I don't care. We've always gotta come second, when there are kids involved--"

"Before they're even born? What does that say about how we're going to treat ourselves?"

"Nothing! It just says we have to give a child the best chance it has, and being born into this--" She threw her hand towards the window. "--isn't the best chance it has!" Alanna slammed her laptop shut.

"If their life's gonna suck as much as you think anyway, then why can't we just have our own?" she shouted.

Rachel drew herself back, set her jaw.

"It's not about life sucking," she said. Her lips trembled.

"It's about risk, it's-- it's about fear. And I'm scared," she choked out. "I don't...want a child to ever feel like we gave it more risk factors than it already had."

"List five!"

Rachel gasped her disbelief and counted on her fingers, volume rising as she began to cry: "Polar vortexes, wildfires, economic collapse, rising water levels, crops dying--"

"Stop it!" Alanna cried.

Rachel's breath turned to quiet sobs. Alanna got to her feet and walked away.

\*

Rachel was curled around herself in the armchair. She watched the way the sunrise painted the city in its ascent.

Alanna did not announce her presence, but all the same, they shifted together in silence until Alanna was balanced in Rachel's lap with an arm around her shoulders, their heads close together.

"I choose you, every time," she whispered into Rachel's ear.

"Every time," Rachel echoed. They stayed there, quiet and still, until the dark was gone.

# The Case for an Australian Carbon Dividend

Shakti Srikanth

The moral imperative to address climate change has expanded to encompass social and economic costs. Recently, 200 nations gathered in Katowice, Poland for the latest round of climate change negotiations. COP24 coincided with the release of the Intergovernmental Panel on Climate Change's Special Report, which warned of significant risks to the planet if temperatures rise 1.5°C above pre-industrial levels.<sup>1</sup>

Outgoing President of the COP, Frank Bainimarama, commented, "We must also be much more ambitious in raising the many billions of dollars needed to finance climate action and adaptation for the most vulnerable."<sup>2</sup> Bainimarama highlighted what for many is the latest challenge in the fight against climate change – growing inequality. This inequality arises out of the very real concern that a transition to a low carbon economy will drive up the cost of energy and transport, leaving low-income earners worse-off. Therefore, strategies that address climate change must be affordable, reliable and socially beneficial.<sup>3</sup>

One such method is the carbon dividend; a term coined by the Climate Leadership Council (CLC), a Washington-based think-tank. A carbon dividend has two basic features:

1. A 'price' on carbon from greenhouse gas emissions that contribute to climate change
2. A dividend check that distributes collected revenue from the price equally amongst citizens<sup>4</sup>

In 2017, the US Citizens' Climate Lobby proposed a price of US\$15 per ton of CO<sub>2</sub>-equivalent emissions.<sup>5</sup> Yearly price increases of at least US\$10 per year were estimated to reduce US CO<sub>2</sub>-equivalent emissions to within 10% of 1990 levels.<sup>6</sup> An American household could in effect receive up to US\$4800 per year in carbon dividends.<sup>7</sup>

UNSW Grand Challenges on Inequality, co-led by Professors Rosalind Dixon and Richard Holden, have re-worked this model to an Australian context: which they believe is a "completely reliable, comprehensive solution."<sup>8</sup> UNSW Grand Challenges is a think-tank that facilitates critical discussions on public discourse and policy; amongst them are inequality, climate change, refugees and migration.

When asked about the role universities play in leading the fight against climate change, Professor Dixon emphasised the importance of harnessing thought-leadership and expertise. She said:

1. Allen, Myles, Mustafa Babiker, and Yang Chen et al. 2019. "The Special Report On Global Warming Of 1.5 °C (SR15)". Incheon, South Korea: Intergovernmental Panel on Climate Change (IPCC). <https://www.ipcc.ch/sr15/>.

2. President of Fiji Frank Bainimarama. "We must be much more ambitious" – COP23 President at the Talanoa Talks in London". Speech. London, England. 30 November 2018. <https://cop23.com.fj/must-much-ambitious-cop23-president-talanoa-talks-london/>.

3. Richard Holden and Rosalind Dixon. 2019. "A Climate Dividend for Australians". Sydney, Australia: UNSW Grand Challenges. <http://www.grandchallenges.unsw.edu.au/climatedividend/>.

4. Raymond, Leigh. "A carbon dividend really can slow fossil fuel use – under these conditions." The Washington Post, 13 March, 2017. Accessed 26 February, 2019. [https://www.washingtonpost.com/news/monkey-cage/wp/2017/03/13/a-carbon-dividend-really-can-slow-fossil-fuel-use-under-these-conditions/?noredirect=on&utm\\_term=.d21c3456effe](https://www.washingtonpost.com/news/monkey-cage/wp/2017/03/13/a-carbon-dividend-really-can-slow-fossil-fuel-use-under-these-conditions/?noredirect=on&utm_term=.d21c3456effe).

5. "The Basics Of Carbon Fee And Dividend". Citizens' Climate Lobby. Accessed February 26. <https://citizensclimatelobby.org/basics-carbon-fee-dividend/>.

6. Ibid.

7. Ibid.

8. Rosalind Dixon (Professor of Law, UNSW), interviewed by Shakti Srikanth at UNSW, 1 March 2019.

*[Thought-leadership] means contributing to public debate and setting an agenda for change; expertise-based asks 'what expertise do we have in the university' and 'how can we harness the power of advocacy groups' such as the Citizens' Climate Lobby Australia who have been influential in bringing the carbon dividend to our attention. Firstly, UNSW is one of the leading research facilities in Australia for oceanography and climate science, secondly, UNSW has academics who can come-up with policy solutions that can be fed into the political process and debate.*

In an era where political factions are increasingly questioning science and evidence, universities must further attempt to defend the facts.

\*

Grand Challenges' Australian Carbon Dividend Plan (ACDP) is a carbon tax, or a 'Pigouvian tax' – one that internalises a 'negative externality'. The Pigouvian tax is essentially a tax on behaviour, which increases the cost of the behaviour to deter consumers from acting in a particular way (i.e. polluting).<sup>9</sup> The harmful effects of the action are referred to as negative externalities. If governments set the level of the tax to the level of the social cost imposed by the externality, a Pigouvian tax says that the externality can be offset. In other words, the market will equilibrate the economic benefits (e.g. consumption, growth) and environmental and social costs (e.g. climate change).

As leading climate economist, and Professor of University of Chicago, Michael Greenstone opined in a statement to the United States House Committee on Science, Space and Technology, "by calculating the costs of climate change, the social cost of carbon allows for the calculation of the monetary benefits of regulations that reduce greenhouse gases."<sup>10</sup>

Under the ACDP, emitters of CO<sub>2</sub> will be taxed A\$50 per ton of CO<sub>2</sub> released.<sup>11</sup> The A\$50 would then be remitted back to Australians via direct deposit, dividend checks, or even contributions to retirement-savings accounts. The average Australian family<sup>12</sup> would receive approximately A\$2,600 per annum in tax-free payments.<sup>13</sup>

The ACDP further addresses Australian exports and imports. For countries without analogous schemes, Grand Challenges have proposed that exports receive tax rebates whilst imports are charged fees based on the carbon content of those products.<sup>14</sup> This respectively encourages and discourages emitters from relocating to jurisdictions more permissive of greenhouse gas emissions however, a border adjustment feature does carry legal and practical challenges, including the assumption that it would provide domestic businesses with a competitive advantage. Even so, Grand Challenges conclude that with the correct due diligence and monitoring these concerns can be managed.<sup>15</sup>

Of course, as in any climate policy, there must be great incentive for large businesses to reduce their carbon emissions. The Citizens' Climate Lobby show that energy inefficient businesses will become less competitive and risk losing market share – a direct result of the proportionality between the carbon fee and the dividend.<sup>16</sup> In Australia, the ACDP recommends rolling-back various regulations on carbon dioxide emissions that may have prevented investment in renewable technologies.<sup>17</sup> Interestingly, the ACDP does not encourage the use of government subsidies.<sup>18</sup> If subsidies were phased out, an A\$500 million budgetary benefit could be achieved in year 1, growing to A\$2.5 billion annually by year 5.<sup>19</sup>

Carbon taxes aren't a novel idea in Australia; in 2011 the Gillard Government introduced a carbon tax under the Clean Energy Act. A A\$23 per ton tax was instituted on entities who emitted more than 25,000 MT of CO<sub>2</sub> per year.<sup>20</sup> Significantly, both the agricultural and transport industries were excluded from this tax imposition, which left 20% of transport emissions alone untaxed.<sup>21</sup>

Compensation was only awarded to those earning more than A\$18,200; the government did not establish schemes for parties such as pensioners and adult dependents.<sup>22</sup> In this respect, a significant difference between the Carbon Tax and ACDP is that the latter is

9. Kagan, Julia. "Pigovian tax." Investopedia. <https://www.investopedia.com/terms/p/pigoviantax.asp> (accessed 4 March 2019).

10. Milton Friedman Professor in Economics Michael Greenstone.

"Statement of Michael Greenstone presented to United States House Committee on Science, Space and Technology, Subcommittee on Environment, Subcommittee on Oversight, hearing on "At What Cost? Examining the Social Cost of Carbon". Statement, Washington, DC, 28 February, 2017. [https://epic.uchicago.edu/sites/default/files/Greenstone%20SCC%20testimony%20022717.pdf?fbclid=IwAR3zWgORPiRk06bHbiv4\\_4wjpgO9GD-pLiwPU04C4ZnLVt7mLcc5UBJdcw](https://epic.uchicago.edu/sites/default/files/Greenstone%20SCC%20testimony%20022717.pdf?fbclid=IwAR3zWgORPiRk06bHbiv4_4wjpgO9GD-pLiwPU04C4ZnLVt7mLcc5UBJdcw), 1.

11. Richard Holden and Rosalind Dixon. 2019. "A Climate Dividend for Australians". Sydney, Australia: UNSW Grand Challenges. <http://www.grandchallenges.unsw.edu.au/climatedividend>, 4.

12. Defined as a typical household of two adults and two children under 18.

13. Richard Holden and Rosalind Dixon. 2019.

"A Climate Dividend for Australians". Sydney, Australia: UNSW Grand Challenges. <http://www.grandchallenges.unsw.edu.au/climatedividend>, 16.

14. Ibid, 13.

15. Ibid, 28.

16. "The Basics Of Carbon Fee And Dividend". Citizens' Climate Lobby. Accessed February 24. <https://citizensclimatelobby.org/basics-carbon-fee-dividend/>.

17. Richard Holden and Rosalind Dixon. 2019. "A Climate Dividend for Australians". Sydney, Australia: UNSW Grand Challenges. <http://www.grandchallenges.unsw.edu.au/climatedividend>, 12.

18. Richard Holden and Rosalind Dixon. 2019. "A Climate Dividend for Australians". Sydney, Australia: UNSW Grand

not regressive – everyone receives the same dividend. The failure of the carbon tax was of course in part a campaign of fear mongering and dirty politics. Understandably, the word ‘tax’ carries negative connotations; however, while a tax has the primary purpose of raising revenue, a fee is a payment in exchange for a service or privilege.

\*

The benefits of a carbon dividend are numerous, and not solely restricted to the environment. The Citizens’ Climate Lobby in America have noted that national employment would increase by 2.1 million jobs after 10 years, and 2.8 million after 20 years with a carbon dividend.<sup>23</sup> The study conducted by the Regional Economic Models Inc. (REMI) also found that a carbon dividend increased household income.<sup>24</sup> Rather than saving, consumers are likely to spend bonus income on goods and services, stimulating the economy. This has positive spillover effects into the labour market, as businesses increase labour hire.

For the ACDP, Grand Challenges predict a similar effect; household spending is likely to increase, as the average household would be an estimated A\$585 per annum better off. Most notably, the lowest income quintile are estimated to be A\$1,305 better off as a result of their tendency to save.<sup>25</sup>

\*

Jurisdictions in North America have taken a similar dividend approach on ‘common-property’ resources. Since 1982, the Alaskan Permanent Fund has sent annual checks drawn from earnings on oil royalties to residents.<sup>26</sup> As of 2015, the fund’s value was nearly \$US52 billion.<sup>27</sup> A recent survey by the Economic Security Project, found that 81% of residents agreed state-run cash transfer programs improved their quality of life.

If the CLC’s carbon dividend does manage to pass US Congress, climate change advocates are optimistic about public sentiment. A 2017 study led by the Yale Program on Climate Change Communication found that American households were on average, willing to pay \$177 a year on household energy bills – annual tax revenue of about \$22.3 billion (before revenue from a carbon tax) – with 57% agreeing that revenue should assist vulnerable low-income communities.<sup>28</sup>

Professor Dixon agrees that the ACDP can change the narratives around welfare and handouts, he stated, “The carbon dividend is not compensation in a pure form [...] all citizens are equal owners and custodians of Australian resources. If you end up A\$600 ahead because of this plan, it is not because it is a handout, it is because you’re a stakeholder in society.”

\*

Past efforts to address climate change have been less than fruitful. In contrast, a carbon dividend for Australia is an inclusive policy-approach. It has two key advantages: firstly, it compensates ordinary Australians for the increased costs associated with paying tax; secondly, it has the capacity to contribute to a broader cultural shift in current Australian political thinking.

With the upcoming election, Grand Challenges are on a crusade to garner support for the ACDP. For Professor Dixon, the interval between now and the election is crucial, he argues: We’re at stage 4 of this project, which is trying to convince people who make decisions to pay attention.

In some ways that’s the hardest, because it is the one that is least within our control. We are writing about it, talking about it, having meetings with people about it, but we’re also trying to get a broader coalition of people on board.

Challenges. <http://www.grandchallenges.unsw.edu.au/climatedividend>, 13.  
19. Ibid, 13.

20. Richard Holden and Rosalind Dixon. 2019. “A Climate Dividend for Australians”. Sydney, Australia: UNSW Grand Challenges. <http://www.grandchallenges.unsw.edu.au/climatedividend>, 27.

21. Ibid, 27.

22. Ibid, 27.

23. Nystrom, Scott, and Patrick Lucknow. 2018. “The Economic, Climate, Fiscal, Power, And Demographic Impact Of A National Fee-And-Dividend Carbon Tax”. Washington, United States: Citizens’ Climate Lobby. <https://11bup83sxdss1xze1i3lp04-wpengine.netdna-ssl.com/wp-content/uploads/2018/05/The-Economic-Climate-Fiscal-Power-and-Demographic-Impact-of-a-National-Fee-and-Dividend-Carbon-Tax-5.25.18.pdf>.

24. Ibid, 2.

25. Richard Holden and Rosalind Dixon. 2019. “A Climate Dividend for Australians”. Sydney, Australia: UNSW Grand Challenges. <http://www.grandchallenges.unsw.edu.au/climatedividend>, 17.

26. See: <https://pfd.alaska.gov/Division-Info/Summary-of-Applications-and-Payments>.

27. Weller, Chris. 2017. “The largest cash transfer program in the US just got a huge vote of confidence”. Business Insider, 29 June 2017. <https://www.businessinsider.com.au/alaska-cash-transfer-program-survey-2017-6?r=US&IR=T>.

28. The Yale Program on Climate Change Communication. 2017. “Americans Willing To Pay A Carbon Tax”. 12 October 2017. <http://climatecommunication.yale.edu/publications/americans-willing-pay-carbon-tax/>.



## Variegated

Madeline Ackerman

My love for you is green, I'm told:  
is freshly cut, or unseasoned –  
is yet to bloom; not yet quite ripe.  
Is not blue: livid with effort –  
unbruised by blows, or holding breath;  
is yet to wring the sky like Zeus.  
Is not red: of rage, or of fire;  
neither of danger, sex, or meat –  
is yet to taste all these things blood.  
Is not yellow: swollen with light;  
also to flee, show cowardice –  
yet to stain our bellies thusly.  
My love for you is green, I'm told –  
it feels ripe enough to bruise with  
blood so hot the wound is lambent –  
but my love for you is green, I'm told,  
scream that I can't see you clearly –  
red, blue and yellow have pooled, soured:  
This is the greening of decay.

# Why seeing Vegan Food at UNSW gets me excited

Michael Dello-Iacovo

**When I first started studying at the UNSW Kensington campus in 2016, it was a struggle for me to find good vegan food.** My usual was the 'classic falafel' at Yummba, but since they closed up shop at the end of last year, I've had to move out of my comfort zone again and go searching.

I work with the Animal Voices club at UNSW, which organises advocacy, activism and social events on campus surrounding animal rights and related issues. Several new students asked me at this year's O-Week where they should go for vegan or vegetarian options. It was then I realised I really didn't have a clue what there was available on campus.

Being a scientist at heart, I decided to do some field work. Armed with a pen and paper, I started speaking to the restaurants and shops on campus, expecting the vegan fare to be rather slim. However, the range of options that are available now blew me away.

I want to give a shout out to Yallah Eat, where I ate the best (spiced) cauliflower I've ever had. Around 80% of their options are vegan, and I may have found my new regular. This newly available range of choices on campus has me excited, and not just because I love delicious vegan food.

I became vegan in 2014 after discovering the extent of the animal cruelty and environmental damage in animal agriculture, and later learned of some of the ways a plant-based diet can benefit one's health. More vegan options on campus make it easier not just for me, but for everyone to enjoy food that is better for us, the environment, and of course, the animals.

Speaking a little more broadly, the availability of plant-based alternatives for products like meat, milk and eggs are exploding worldwide. Already in 2019, UK bakery chain Greggs has a vegan sausage roll and Australian supermarkets are stocking vegan Magnums and Cornettos. Forbes and The Economist called 2019 the 'year of the vegan'<sup>1</sup> and I think they may be right.

I want to talk a little about why I think the availability of vegan options is such a big deal. I won't talk so much about the cruelty side of the argument, as most people have heard this on some level by now. But in a time when climate change has come to the forefront of mainstream political and social dialogue, I believe that

animal agriculture needs to be made front and centre too.

So far, the increase in global temperature due to human activity is estimated at around 1.0°C. This is likely to reach 1.5°C between 2030 and 2052 if it continues at the current rate.<sup>2</sup>

In Australia, the animal agriculture industry accounts for around 11% of national emissions (carbon equivalent) when projecting the impacts over a 100 year timescale. However, when using a 20 year timescale, it accounts for 50%.<sup>3</sup> This is because methane, while shorter-lived in the atmosphere, has a much stronger climate forcing effect. The proportion of methane in animal agriculture is much greater than in industries such as energy and transport, the amount of warming it will create over the next twenty years is significantly higher.

Carbon accounting can be complicated. Do we count the emissions of the transport of farmed animals under the transport sector, or the animal agriculture sector? These types of questions are important. For this example, these emissions would be considered part of the transport sector. However, if we remain solely concerned about which sector we should be focusing on this doesn't necessarily give us the entire picture. Reducing the prevalence of the animal agriculture industry would reduce these indirect emissions as well, and possibly reduce net emissions more than focusing on the energy directly.

Despite what I see as a glaringly obvious elephant in the room, many of our politicians, even those who accept climate change (thankfully seeming to be in the majority), will ignore animal agriculture. I recently met Matt Thistlewaite, Labor MP for Kingsford Smith, and asked him why he talks about energy policy but not agriculture policy in relation to climate change. He changed the subject.

As a food source, animal agriculture is incredibly inefficient, even once we put aside the matter of climate change. When asked to think of farmed animals in Australia, we usually think of cattle and sheep roaming around fields, eating pasture. However, most animals raised for food in Australia are not grazing, but rather are raised in intensive indoor operations known as 'factory farmed'.

Animals in such farms are usually fed grain, which is grown and transported to the farm. For cows, 1 kilogram of meat takes around 12 kilograms of grain, 9,500 litres

of water and almost four litres of fuel to produce. Other farmed animals such as chickens and pigs have similar conversion rates. Soybean and corn are also commonly grown around the world for use as feedstock for farmed animals. These products could just as easily be eaten by people, resulting in even less land required to grow crops.

Regardless of whether the animals are grazing or not, a significant amount of land is required (either for their grazing or to grow the crops). Today, 26% of land on Earth is used for animal farming in some way. Land continues to be cleared in Australia and across the world to make room for more grazing and crop land.

82% of agricultural land in Australia is being used for grazing and this continues to grow. The land clearance required to make room for this grazing is putting native wildlife under threat, with 75% of the 1,640 threatened plants and animals in Australia being primarily threatened by habitat loss. An enormous 93% of land clearance in Queensland from 1988 to 2009 was to make room for livestock grazing.

In 2017, land clearance laws in NSW were altered, exposing 99% of identified koala habitats on private lands to clearing. Cutting out animal products can reduce one's food-related carbon footprint by up to 73%, and can bring food-related land use down to just 25%.

The livestock industry also produces a significant amount of waste. Globally, it is around 130 times that of the human population. This waste has to go somewhere, and much of it finds its way in to rivers, and often contains a range of diseases which can be detrimental to humans and wildlife.

If the waste reaches the ocean, it can create 'ocean deadzones', areas of the ocean with near-zero oxygen, resulting in long-lasting, detrimental effects.<sup>4</sup> In some farms, fecal waste is sprayed in to the air, even near residential areas. This is an issue that disproportionately affects underprivileged communities, as the cheapest residential living is often nearest to farming operations.

The science around the health benefits of a plant-based diet are still somewhat contested, but there are a few things we can say with confidence. A well-planned vegan diet is nutritionally adequate for all adults, children and babies. But in addition to just surviving, vegans have a higher concentration of blood protein than non-vegans, and eating fewer animal products results in a lower risk of cardiovascular disease, type 2 diabetes and some cancers.<sup>5</sup>

A reduced demand for animal products in Australia, or indeed globally, would directly result in less deforestation and emissions. This brings me back to why I'm so excited about more vegan food. As the range of choices continues to grow at UNSW and across Australia, I'm confident that we will start to see some real change in the environmental damage caused by the practices of the agriculture industry, even without government action.

Even if you think you could never be vegan (don't worry, I used to think that too), more delicious vegan food should cause us all to celebrate.

## *In Australia, the animal agriculture industry accounts for around 11% of national emissions (carbon equivalent) when projecting the impacts over a 100 year timescale.*

1. "The World In 2019". The Economist, 2019. [https://worldin2019.economist.com/theyearofthevegan.](https://worldin2019.economist.com/theyearofthevegan)
2. "Temperatures To Rise 1.5 Degrees Celsius By 2030-2052 Without Rapid...". U.S., 2019. [https://www.reuters.com/article/climatechange-ipcc/temperatures-to-rise-1-5-degrees-celsius-by-2030-2052-without-rapid-steps-u-n-report-idUSL8N1WM0JJ.](https://www.reuters.com/article/climatechange-ipcc/temperatures-to-rise-1-5-degrees-celsius-by-2030-2052-without-rapid-steps-u-n-report-idUSL8N1WM0JJ)
3. "Animal Agriculture And Global Warming". Vegan Australia, 2019. [https://www.veganaustralia.org.au/animal\\_agriculture\\_and\\_global\\_warming?fbclid=IwAR1gdtbo9Ctu5RCYjBNED3Nei0Wd3IQOSoVtRU-iNzIE\\_CYhdpDMG0f9io.](https://www.veganaustralia.org.au/animal_agriculture_and_global_warming?fbclid=IwAR1gdtbo9Ctu5RCYjBNED3Nei0Wd3IQOSoVtRU-iNzIE_CYhdpDMG0f9io)
4. "Declining Oxygen in the Global and Coastal Waters." Science, 2018. [http://science.sciencemag.org/content/359/6371/eaam7240.](http://science.sciencemag.org/content/359/6371/eaam7240)
5. "Q&A on the Carcinogenicity of the Consumption of Red Meat and Processed Meat." World Health Organization, 2015. <https://www.who.int/features/qa/cancer-red-meat/en/>

# THE GREEN DEAL: A MODEST PROPOSAL

Stephen Mellhuish

**One of the most prominent topics in American politics this year has been a set of proposals collectively called the Green New Deal. The current form of the Green New Deal is a non-binding resolution before Congress<sup>1</sup> that's key goal is to enable the United States to reach zero net greenhouse gas emissions by 2030.**

In order to achieve this, the resolution proposes a raft of initiatives including replacing aircraft with high speed rail, retrofitting buildings for energy efficiency, and altering agricultural practices. Recognising that implementing these things will require significant upheaval, the resolution also calls for a suite of social programs to manage the transition and ensure workers in carbon-intensive industries such as coal miners are not left unemployed. All of this might sound idealistic but ultimately it is a worthwhile goal. However, the resolution does not stop there.

The social programs suggested far exceed the problems caused by decarbonisation and include universal healthcare, a form of universal basic income, a federal jobs guarantee, and a range of other impractical policies. Along with the economic fantasy of these programs, the environmental proposals themselves in the resolution are somewhat ambiguous and highly questionable in their efficacy.

Various drafts of the resolution have shown resistance to already-effective nuclear power, resistance to market-based solutions, and resistance to carbon capture technology. Very rough estimates put the cost of implementing all of the proposals at up to a third of America's GDP<sup>2</sup>, with no credible explanation as to how it would be funded. On the whole, the Green New Deal lists a bundle of lofty goals with very few implementable answers.

The resolution has no chance of being passed, even if the Democrats were to control the House, Senate, and Presidency. Proponents are privately aware of this, but feel justified in pursuing it regardless in order to raise awareness of the issue – something which they've undeniably achieved. Nevertheless, the alternative is not that there is no discussion of the issue whatsoever.

A figure such as Democratic representative Alexandria Ocasio-Cortez, who has championed the Green New Deal, would still be a hugely popular and influential politician if she were fighting for more effective proposals.

Other bipartisan bills with great potential for being passed into legislation and having a real impact have been stalled, recognising that it is impossible to gain any media coverage for them. What is perhaps even more concerning is the possibility that once the resolution is defeated, the Green New Deal will be used as a point of comparison for anything that comes after it – even much more reasonable proposals. Its failure will sour the entire climate debate and leave politicians unwilling to weigh in on the issue for fear of being placed in the same basket.

Climate policy in Australia has fallen into this zone of political poison. The past decade has provided us with a series of politically catastrophic failures through the Carbon Pollution Reduction Scheme, Carbon Tax, and National Energy Guarantee. For a politician today, mentioning the words 'carbon pricing' would be equivalent to calling for a ban on cricket. Neither of the major parties are willing to make climate policy a key election issue, and The Greens continue to be the worst offenders of all with a 27-year long run of voting down any hint of progress on the basis that it doesn't go far enough.

Much of the remaining discussion surrounding carbon in Australia is well intentioned but completely misses the highest impact areas for change. Talk of changing consumer choices and awareness campaigns takes huge resources for negligible impact. Emission targets are all well and good but tend to act as a deflection from how we're going to reach them.

Nuclear power should indeed be legalised, but it still seems fanciful that the economics will stack up in our market. Grid reliability is a real concern, but fundamentally a separate issue. Power and fuel prices will almost certainly have to rise in order to incite the transition to new technologies, but we have a broad range of levers to counteract this, from carbon dividend payments to the indexation of social security programs.

Australia doesn't need to wait for every other country to get on board first, although we can and should encourage them to do so and consider more drastic measures such as border adjustments. Needless to say, it would be hugely hypocritical of us to lecture our neighbours without meeting our own emissions reduction agreements first. All of these things are real issues, but not one of them

answers the central question of how we can actually reduce our emissions.

We need pragmatic and palatable policy solutions which can tackle the core of the problem. There is still an ideal model of policy to aim for, one which is market based, technology neutral, and flexible to changing standards, such as the carbon dividend policy put forward by a panel of 27 Nobel Laureate Economists, all former chairs of the Federal Reserve, and many other influential economists.<sup>3</sup>

In America this proposal is a real possibility with growing bipartisan support, and shouldn't be overshadowed by fairies and unicorns. Perhaps in Australia such an idea has become just as outlandish as the Green New Deal itself.

Regardless, there are many other possible options out there, and implementing something is always a better option than implementing nothing. Our focus should be on policies that are directly relevant to emissions reduction and have at least some chance of being passed through parliament.

There is no silver bullet to solving climate change. Progress can only be made through incremental policy improvements but the political debate in both the United States and Australia is prioritising fantasies and distractions over meaningful responses. There are real solutions which can confront the issue without an economic apocalypse, and it's these solutions which deserve our attention. The Green New Deal is merely idealism at the expense of progress.

<sup>1</sup> U.S. Congress, House. Recognizing the duty of the Federal Government to create a Green New Deal. HR 109. 116th Cong., 1st sess. Introduced in House February 7, 2019. <https://www.congress.gov/bill/116th-congress/house-resolution/109>

<sup>2</sup> Smith, N. (2019). The Green New Deal Would Spend the U.S. Into Oblivion. Bloomberg. <https://www.bloomberg.com/opinion/articles/2019-02-08/alexandria-ocasio-cortez-s-green-new-deal-is-unaffordable>

<sup>3</sup> Climate Leadership Council. (2019). Economists' Statement on Carbon Dividends. <https://www.clcouncil.org/economists-statement/>

# experiments in human survival

Hamish Duncan

They're on the curve of the dune. Slate yellow against deep, dark blue. Shoes off, socks flung down the crest, warmth oozing between their toes. It's become about the little things again. Footprints – their own and another set – approaching their position and abruptly stopping. The other set go past them, stumbling, wandering into nothingness...

He tells her that he loves her for the first time, whatever that means.

It feels like the right thing to do and he knows that it's going to be reciprocated; something for her to say in desperation.

Just because, just in case. And if she doesn't say it back, it doesn't matter. What else is there to do?

They can take that small moment of anger and embarrassment to where they're going next.

Firecracker pops still ring out, echoing over empty lands, over a chafing orange horizon that they can only look at for seconds before the pain is too much. A fire is burning somewhere; they can't see it but can smell the melting rubber blowing in on the breeze. Smoke and human. Impossible life shoots up through the sand, thick and green.

Mike thinks that they're facing north. He's done the math, but he was never good at this type of thing. He never needed to be. The compass no longer works; the needle swings on its own accord now, aimlessly, like it's lost its tension. The report, the rumours that followed it, and the report confirming the rumours said that what they were looking for would be taking off from Danggal Park. About twenty-five clicks north from where he thinks that they're currently perched.

It's impossible to tell. How did they do this before?

There are glistening firefly lights somewhere down below, one large spotlight, and what looks to Mike like trucks coming in and out of a makeshift gateway.

This has to be it. Has to be. Otherwise they've come all this way for nothing.

\*

Julie's parents had moved away when she wasn't looking, catching her in a low moment and disappearing. Who could blame them? They were just doing what everyone else was.

There was panic in the streets. Panic and resignation. Half of the world seemed to be going down with the ship while the other half were grabbing lifeboats, scrambling overboard, pushing each other out of the way.

The front door had hung open, the screen banging with every hush of the wind.

Nothing valuable seemed to be missing. You couldn't sell any of it anyway. A half drunk cup of coffee sat on the kitchen table with small lily pads of mould beginning to form on the surface. The flies were dead too. They'd left the fridge open and a noxious gas was leaking out, the machine's ticking electronics slowly winding down and dying.

Mike had put his arms on Julie's shoulders, squeezed her tightly, and then gone to look for more food upstairs.

"There won't be anything up there."

"Let me check anyway."

"You know best."

\*

They had met at a bus stop. The coach was supposed to come to drag the last of them away from their homes once Adelaide had finally fallen under the same spell of fire and chaos that had taken everything else. It never showed up; nothing had come over the horizon except for waves of anxiety that they had shared together and bonded over and sustained sweaty eye contact during.

Dusk loomed and decisions rang out in the burning summer air.

"Where are we going?"

"Where are you from?"

"Does it matter?"

"I'd still like to know."

She had rolled her eyes; he had smiled to himself. Another earthquake ripped through town. Where next?

They decided. He decided, really; she acquiesced.

\*

There had been a note left for Julie upstairs on the dresser. Mike had picked it up, studied it, drinking in the emotion and spitting it out again. They were fleeing, abandoning her. Cowards. He'd put the note in his pocket and ignored the two bodies lying on the bed, their hands still clasped together and stiff with rigor mortis. He told her that there was nobody up there; nothing out of the ordinary, at least. He had seen this all before.

They had left town immediately after that, with no real reason to look back.

There was another bomb that night, and they just missed it.

\*

Before all this, Mike had had a job. Well, he earned money doing something; that was all he'd admit to down at the bar back when things were bad, but not so bad, and nothing anyone said meant anything. He'd planned on concealing all of that, his previous life, from Julie. He tells her at first that he was a plumber, and stays vague. Genius, he thinks. He has the build for it, so she believes him initially, and there's no running water anywhere. How could he possibly get caught out? It's an obsolete profession.

But eventually it happens: some army base deserted long ago, as everyone headed north, a pump with a broken...who knows what.

But aren't you a plumber, Mike - shouldn't you know how to fix this?

She didn't speak to him for a day and a half, sticking with him but not to him, like a fly. Eventually, she had come back around, knowing that without him she'd be alone and probably dead before long.

That's a lie too. He knows exactly which way her boyfriend went, the last part of her old life. He'd watched the whole separation go down from a distance as he made his plans: two pale white hands separated as an entire suburb looted themselves dry, a teary-eyed Prime Minister on TV giving up, admitting the worst. Dangerous, hopeless words finally broadcast into public air.

That was a month ago and in between then and today, as the clock was finally running out on the planet, their hopes dwindling, they'd been through a lot. A lifetime's worth of running from immediate danger, bag-snatches, and huge, open-mouthed mushroom clouds rising over endless horizons that shrunk like drying puddles as the sun gave up. Experiments with tap water in three separate towns, told-you-so arguments, and violent, enforced make-ups. Gentle persuasions, big steps taken lightly like lace off shoulder blade.

An alarm sounds in the valley below. They watch as though they're standing above a zoo enclosure. A shot of steam erupts from the side of something; people scream and shout in angry, masculine voices. The alarm is silenced and they stay silent for a while, breath held in as the lights go off then come back on, as if the entire painted landscape below is rebooting.

Julie turns to him with stars in her eyes. He can see her looking, but stays staring at the swaying rocket below.

The countdown starts.

10. 9.

He holds her hand.

8. 7.

She squeezes, says, "I don't know if I can keep holding on."

6. 5.

Steam shoots out again, blowing the sand away, as it topples on nearby trees. Something demonic rises in the sand and the 4, 3, 2 and 1 is silenced by a long, tearing noise like something primal being ripped from the ground.

Nothing is audible, nothing is visible; just white light and screaming insanity under the moon which edges closer and closer, ripping oceans aside and toppling societies.

The rocket lifts slowly from the ground and Julie tears her hand away from Mike, standing up with her hands to her head.

It seems to be struggling to rise, as though gravity is winning out - tilting to the right, its aim to the heavens off. Mike remembers the rumour, spread to him by someone in a dried up pub somewhere: they had run out of almost all the fuel and were making do with what they had. Maybe this is because of that. Or maybe it's destined to fail like the moon was destined to approach. Maybe it's all destiny and what's happening is meant to be, and it's meant to be happening right now.

The rocket climbs and climbs, delayed sheets of hot air gently pushing back everything and everyone left behind.

Mike and Julie watch as the rocket careens to the right, separates, and collapses in on itself in a star-shaped cloud of white and red.

They want to rise, to disappear, to flee. The explosion reigns. They lean into it and smell the burning sulphur. Julie is no longer aware that she's crying and as workers flee to dodge the falling debris, she finally looks up through her hands, through the clouds, through the moon, to something else, and feels the tide lap against her ankles.

# SRC Report

Angela Griffin

## Hi there!

My name is Angela Griffin and I am your SRC President for 2019. I am at the head of a team of 25 dedicated students who were elected at the end of 2018 to be your student voice with the university, with Arc and in any other relevant area. For those who don't know, it's the SRC's job to fight on behalf of students to ensure that our university provides its students with the best quality of education, a safe and equitable learning environment, and fun! We represent both undergraduate and postgraduate students and we are dedicated to ensuring that UNSW is the best place possible.

If you are a person who is passionate about changing our university for the better, you could do nothing better than join an SRC Collective! SRC Collectives meet once a week to discuss problems they see on campus and make plans on how to improve UNSW. We have a collective for every interest so please come along:

### **Mondays**

10am Queer Collective, Queer Room, Chemical Sciences Building

1pm Education Collective, Mezzanine Level, Arc Reception

### **Wednesdays**

4pm Ethno-Cultural Collective, SRC Ethno-Cultural and International Space

### **Thursdays**

11am Women's Collective, SRC Women's Space

2pm International Students Collective, SRC Ethno-Cultural and International Space

4pm Welfare Collective, SRC Welfare and Disabilities Space

5pm Students with Disability Collective, SRC Welfare and Disabilities Space

### **Fridays**

11am Environment Collective, Mezzanine Level, Arc Reception

This term the SRC is focused on your experience with trimesters. We want to know everything about your experience - the good and the bad. If you have something to say on this matter please email me at [srcpresident@arc.unsw.edu.au](mailto:srcpresident@arc.unsw.edu.au).

Other things we are focused on this term include: UNSW divestment from fossil fuels, the creation of a bullying and harassment reporting portal, the improvement of club and society training, physical and online accessibility improvements for disabled students, engagement in the Stop Adani movement, more accessible counselling services, engagement in the abortion decriminalisation movement and many more!



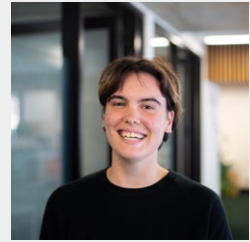
Email the relevant office bearer for more information on their collective:



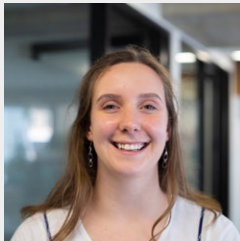
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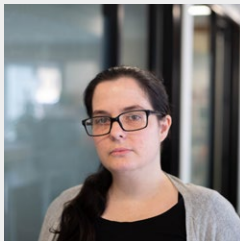
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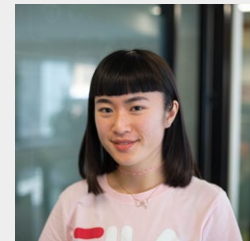
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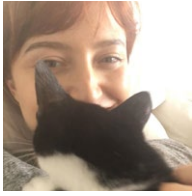
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## CONTRIBUTORS



MADELEINE ACKERMAN is in her first year of a creative writing PhD and spends most of her time making nervous cups of tea. Her work explores intersections of trauma, affect and feminist life writing.



AMELIA CALEY is a second-year student of Fine Arts and Science at UNSW and has always been interested in the way things work, learning, making and discovering in the squishy world of biology. She sees creativity as a natural extension of science, necessary for new perspectives, problem solving and communication. Her passion lies in biology, art, and science communication.



JUSTINE CHING is a perpetually tired Commerce/Arts student always in need of a coffee despite her growing lactose intolerance. With a goal of writing more this year, she hopes to offer fresh perspectives on popular culture, the perils of reading too closely into astrology, and the (mis)use of the Oxford comma.



MICHAEL DELLO-LACOVO is undertaking a PhD in space science at UNSW, examining planetary exploration methods. He is also the previous CEO of Effective Altruism Australia and is

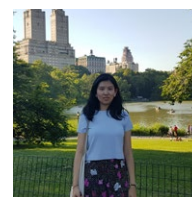
involved with the Animal Justice Party, including as the candidate for Heffron in the 2019 NSW state election.



HAMISH DUNCAN was born in Melbourne and lives in Marrickville. He is currently completing a Criminology & Criminal Justice degree at UNSW. He has previously written for Acidic Fiction, The Rumpus and Toppermost.



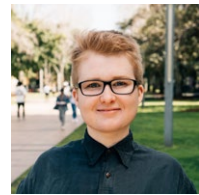
JENNIFER FU is an illustrator who primarily uses the digital medium for her works. She has received the Highly Commended Award for her work in the 2015 Royal Easter Show Art Competition and produced art for her high school yearbooks and awards ceremony programs. Currently, she is completing a Bachelor of Commerce/LLB dual degree at UNSW.



CRYSTAL JI is an International Studies/Law student, cat-whisperer and cheese devotee. Crystal's favourite topics to discuss and dissect include issues of diasporic cultural identity, intersectional feminism and environmental politics. In her spare time, she is an avid reader of dystopic fiction and a film fanatic who will watch anything ranging from Disney to Yorgos Lanthimos films.



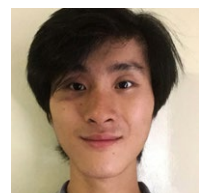
STEPHEN MELLHUIISH is a fourth year commerce student completing an Honours year in Finance. He is particularly interested in public policy and its interaction with business and financial markets.



AXEL-NATHANIEL ROSE is a third year Creative Writing student from the Blue Mountains. He has been writing novels since the tender age of five, his debut 'The Evle King' dedicated to his brother's tyranny over the household armchair. Since then, his writing has expanded, with particular focus on queer themes, mental illness and social media. He is also an orator and poet.



SHAKTI SRIKANTH is a sixth year Arts/Law student; some would say she's over-stayed her time at UNSW. Outside of university, she is like any other 22-year old - binge watching Netflix, feasting with family and friends, and trash-talking Married at First Sight.



JACK ZHOU is an Arts/Law student with an enormous passion for history, literature and politics. His main interests are pre-modern Asia and Europe. An ardent believer that we can learn from history, he has tried to make it the subject of deeper conversation.

# Want to contribute?

Send your stories  
ideas  
& other submissions



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